

Notice of Allowability

Application No.

10/047,469

Examiner

Dalei Dong

Applicant(s)

EDEN ET AL.

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment filed on December 16, 2005.
2. ☒ The allowed claim(s) is/are 1-17, 19-44, 46-55, 75 and 76.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

1. The Amendment filed on December 16, 2005, has been entered and acknowledged by the Examiner.

Allowable Subject Matter

2. Claims 1-17, 19-44, 47-55, 75 and 76 are allowed.
3. The following is an examiner's statement of reasons for allowance:

Regarding to independent claim 1, prior art of record taken alone or in combination fails to teach or suggest a microdischarge device, comprising: a cavity extends through at least a surface of the second layer in combination with other claimed features of the claimed invention.

Regarding to claims 3, 4, 6, 1-17, 20, 23-28 and 75 are allowable because of the dependency upon the allowable independent claim 1.

Regarding to independent claim 2, prior art of record taken alone or in combination fails to teach or suggest a microdischarge device, comprising: a cavity having an inverted square pyramidal shape.

Regarding to independent claim 5, prior art of record taken alone or in combination fails to teach or suggest a microdischarge device, comprising a first layer,

Art Unit: 2879

the intermediate layer and the second layer form a diode, and the intermediate layer is a depletion region of the diode.

Regarding to claims 7-11, claims 7-11 are allowable because of dependency upon the allowable independent claim 5.

Regarding to independent claim 12, prior art of record taken alone or in combination fails to teach or suggest a microdischarge device, comprising: an angle of taper of the cavity is at least 20 degrees and at most 60 degrees.

Regarding to independent claim 13, prior art of record taken alone or in combination fails to teach or suggest a microdischarge device, comprising: an area of the cavity at a surface of the first layer is not greater than $10^4 \mu\text{m}^2$.

Regarding to independent claim 14, prior art of record taken alone or in combination fails to teach or suggest a microdischarge device, comprising: a depth of the tapered cavity in the first layer is not greater than 100 μm .

Regarding to independent claim 19, prior art of record taken alone or in combination fails to teach or suggest a microdischarge device, comprising: the side walls of the cavity are coated with a film that reflects light.

Regarding to independent claim 21, prior art of record taken alone or in combination fails to teach or suggest a microdischarge device, comprising: a second layer comprises an electrically conducting screen disposed on an end of the cavity.

Regarding to claim 22, claim 22 is allowable because of the dependency upon the allowable independent claim 21.

Regarding to independent claim 29, prior art of record taken alone or in combination fails to teach or suggest a microdischarge device, comprising: a cavity extends through at least a surface of the second layer in combination with other claimed features of the claimed invention.

Regarding to claims, 30, 32, 41-43, 47, 50-55 and 76 are allowed because of the dependency upon the allowable independent claim 29.

Regarding to claim 31, prior art of record taken alone or in combination fails to teach or suggest a microdischarge device, comprising a first layer, the intermediate layer and the second layer form a diode, and the intermediate layer is a depletion region of the diode.

Regarding to claims 33-37, claims 33-37 are allowable because of dependency upon the allowable independent claim 31.

Regarding to independent claim 38, prior art of record taken alone or in combination fails to teach or suggest a microdischarge device, comprising: an angle of taper of the cavity is at least 20 degrees and at most 60 degrees.

Regarding to independent claim 39, prior art of record taken alone or in combination fails to teach or suggest a microdischarge device, comprising: an area of the cavity at a surface of the first layer is not greater than $10^4 \mu\text{m}^2$.

Regarding to independent claim 40, prior art of record taken alone or in combination fails to teach or suggest a microdischarge device, comprising: a depth of the tapered cavity in the first layer is not greater than 100 μm .

Regarding to independent claim 44, prior art of record taken alone or in combination fails to teach or suggest a microdischarge device, comprising: a intermediate layer comprises a plurality of dielectric layers, at least two of the plurality of dielectric layers having different dielectric constants.

Regarding to independent claim 46, prior art of record taken alone or in combination fails to teach or suggest a microdischarge device, comprising: the side walls of the cavity are coated with a film that reflects light.

Regarding to independent claim 48, prior art of record taken alone or in combination fails to teach or suggest a microdischarge device, comprising: a second layer comprises an electrically conducting screen disposed on an end of the cavity.

Regarding to claim 49, claim 49 is allowable because of the dependency upon the allowable independent claim 48.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalei Dong whose telephone number is (571)272-2370. The examiner can normally be reached on 8 A.M. to 5 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on (571)272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

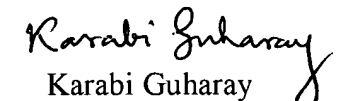
Art Unit: 2879

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



D.D.

February 27, 2006



Karabi Guharay
Primary Examiner
Art Unit 2879